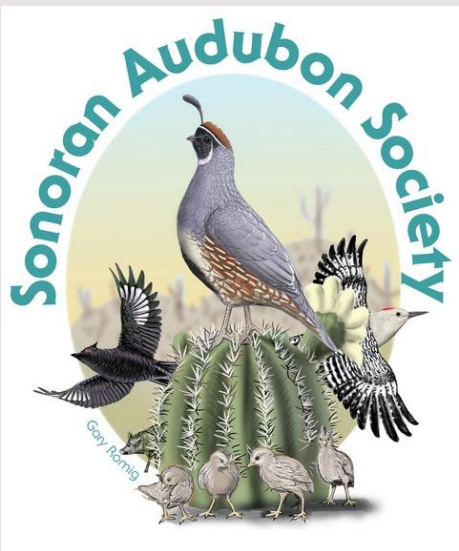


# Native Plants for Birds: Glendale, Peoria, and Avondale 2021

Kaylee Delcid



Photo Credit: Bob McCormick





# Proclamation

## CITY OF GLENDALE

**WHEREAS**, water is one of Arizona's most precious natural resources and is vital to the economic vitality of our communities; and

**WHEREAS**, the Glendale Water Services Department is committed to managing and planning to meet the water needs of its current and future customers; and

**WHEREAS**, the Glendale Water Services Department offers a comprehensive water conservation program to help residents and businesses conserve water; and

**WHEREAS**, practicing a water-efficient lifestyle is a way each resident and business in Glendale can help ensure a sustainable water supply; and

**WHEREAS**, proclaiming April as Water Awareness Month benefits the City and community by encouraging all citizens to be good stewards of Arizona's water resources.

**NOW, THEREFORE**, I, Jerry P. Weiers, Mayor of the City of Glendale, Arizona, on behalf of the City Council do hereby proclaim April 2021 as

## Water Awareness Month

And encourage all our citizens to use water wisely and realize that the well-being of our community depends on a safe, reliable, and high-quality water supply.

In witness hereof, I hereunto set my hand this 13<sup>th</sup> day of April 2021.

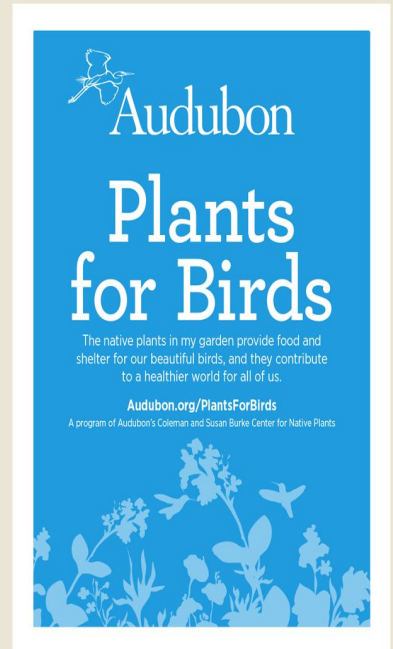
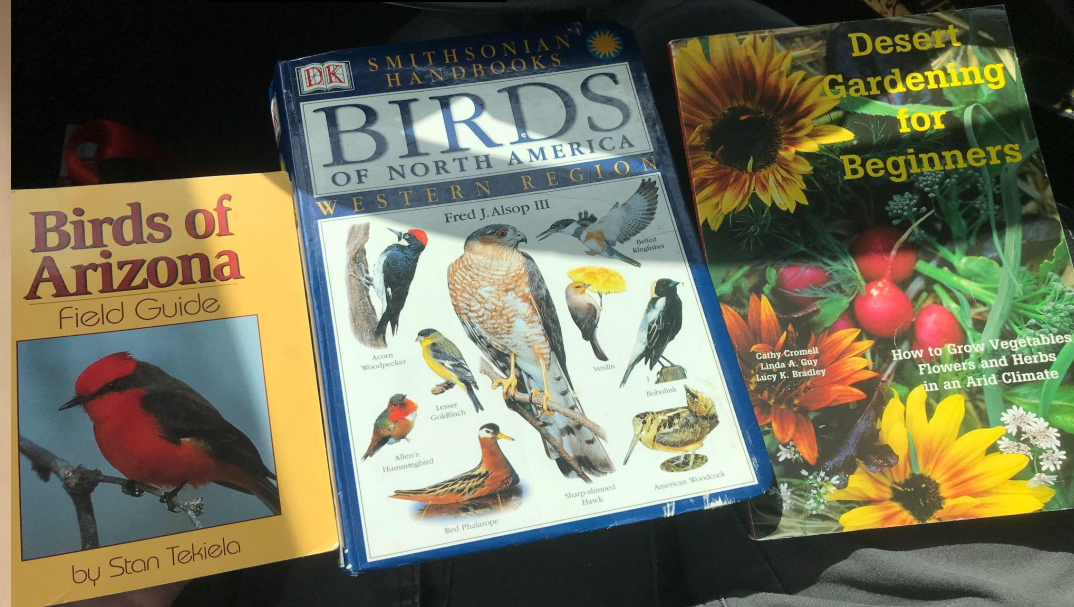
MAYOR

Attest,

CITY CLERK



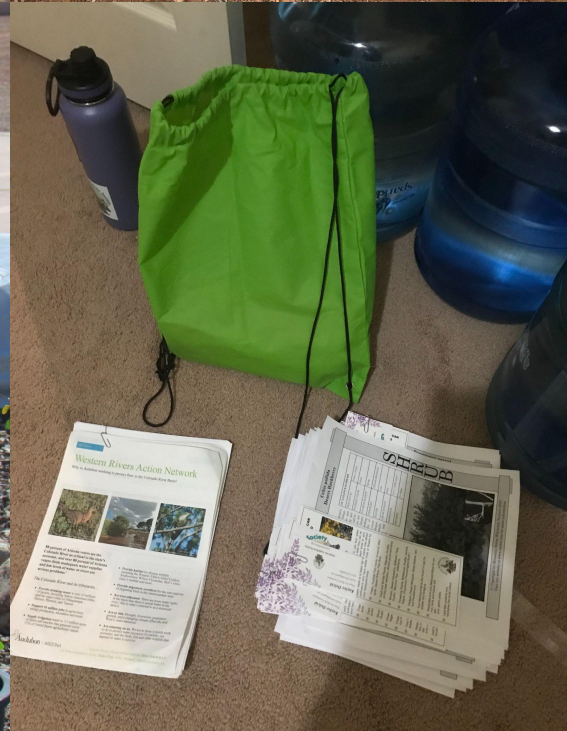
## Glendale



Birds in the Garden: Earth Day 2021











# Avondale & Phoenix



## RESTORE OUR EARTH™ EARTH DAY 2021



You are invited to a presentation by Kaylee Delcid, "Desert Gardens for Plants and People" on Friday April 23rd 10-11am

Link for presentation: [Earth Day Kaylee Delcid](#)

Kaylee graduated from ASU in Fall 2020 with a degree in Conservation Biology and Ecology. While at ASU, Kaylee started a student chapter of the Audubon Society – Sun Devil Audubon Student Conservation Chapter – and is currently assisting the Tempe campus with designing and installing a pollinator garden on their campus. Kaylee wants to help people learn how to plant their own pollinator gardens to support the dwindling number of pollinators in the Arizona desert. In addition, she is currently interning with the Sonoran Audubon Society and is volunteering at Liberty Wildlife.

She was a student at EMCC from 2017-2019. While here, she helped to start EMCC's Animal Ambassador program and participated in carrying out Burrowing Owl research with Jarod Rathel. Kaylee will come to EMCC this spring to gather more information concerning the Burrowing Owls and how they are faring in their habitats at EMCC.



Kaylee holding a pot of *Justicia californica*, commonly known as Chuparosa or Hummingbird Bush, to set up on her apartment patio to attract hummingbirds. She also has a hummingbird feeder. Her cat often stares at the birds through the window with rapt attention. Notice her pollinator shirt.





# SAS Horseshoe Ranch Picnic

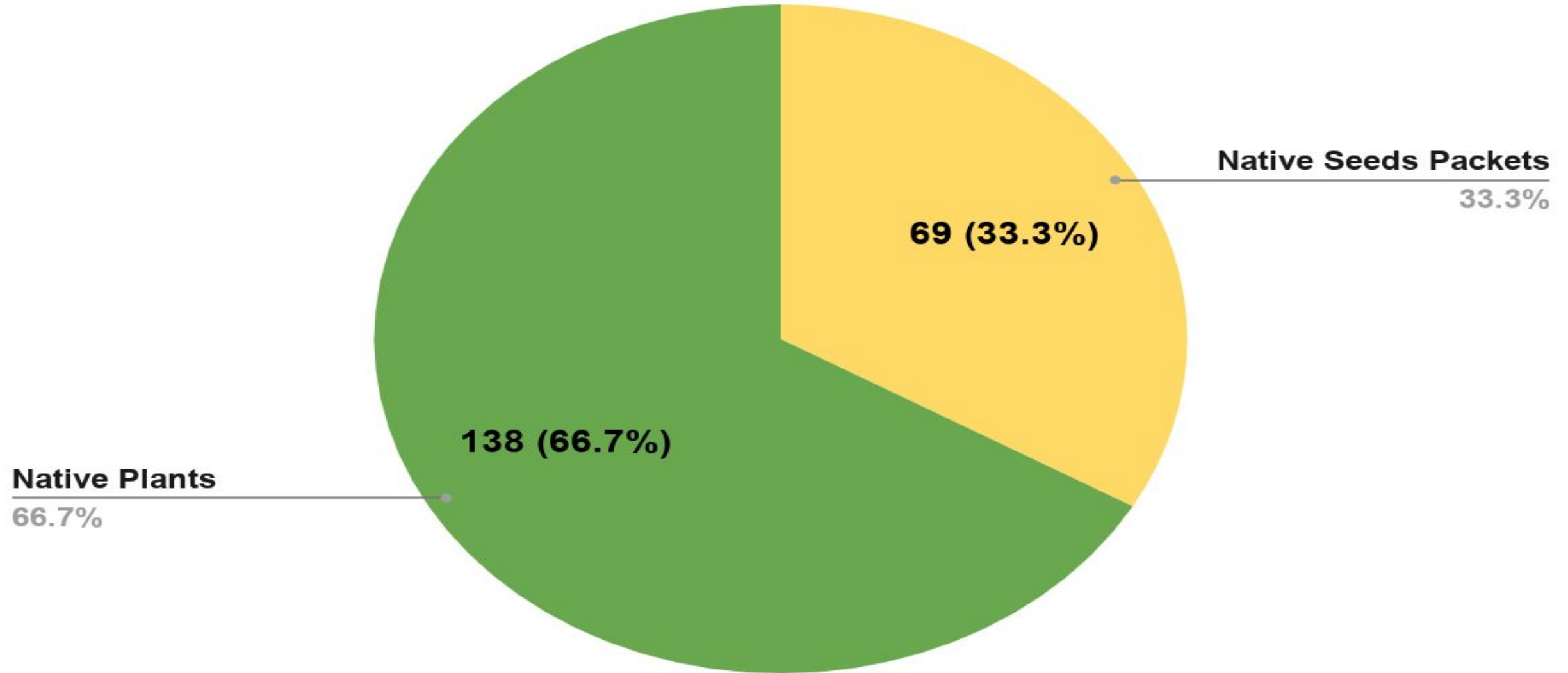
- + 2 Parry Penstemon (*Penstemon parryi*), 3 Wolfberry (*Lycium andersonii*), 1 Hackberry (*Celtis pallida*), 1 Chuparosa (*Justicia californica*), 2 Brittlebush (*Encelia farinosa*), 2 Pink Perezia (*Acourtia wrightii*)
- + Brittlebush (*Encelia farinosa* var *phenicodonta*) and Superstition Mallow (*Abutilon palmeri*) seeds





# Totals

## Native Plants Donated



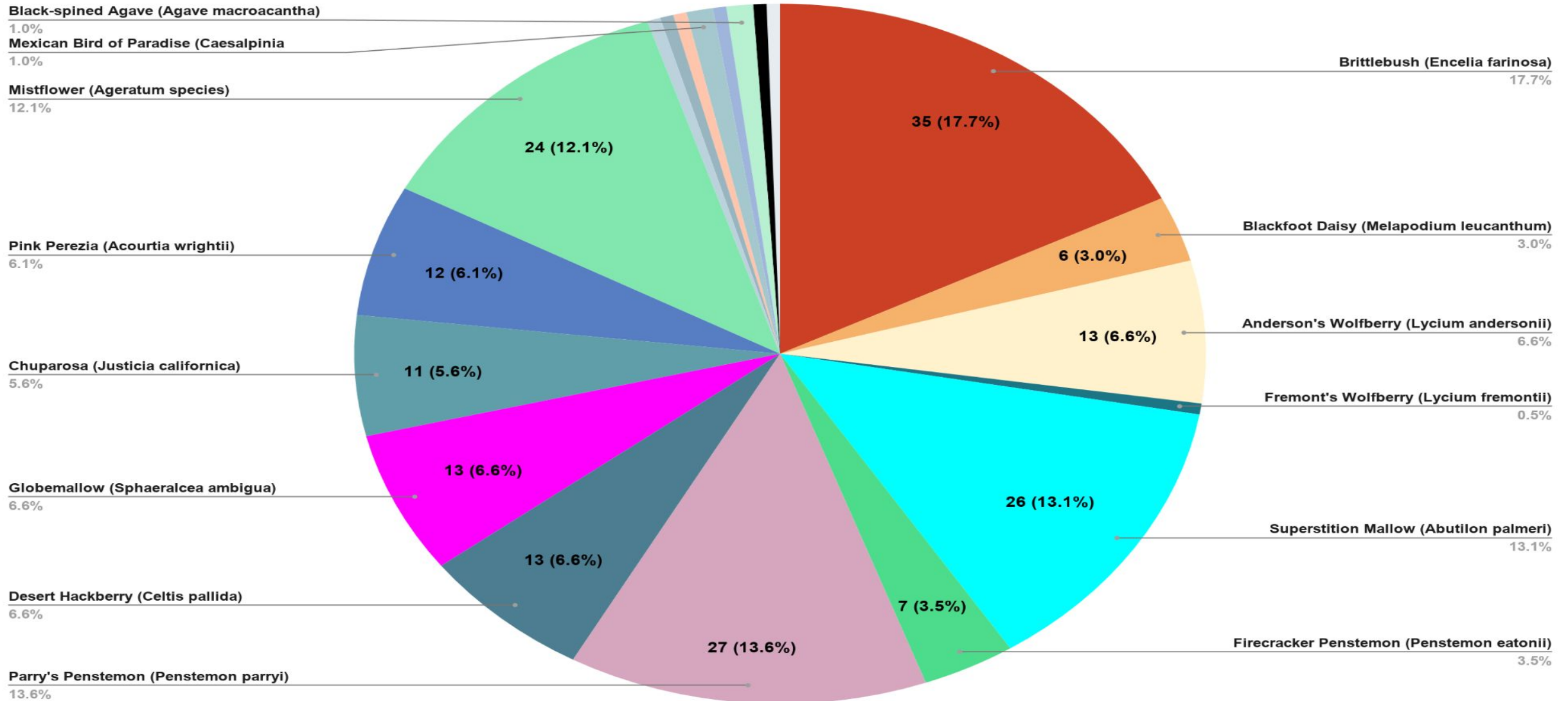
TOTAL: 207



# Totals

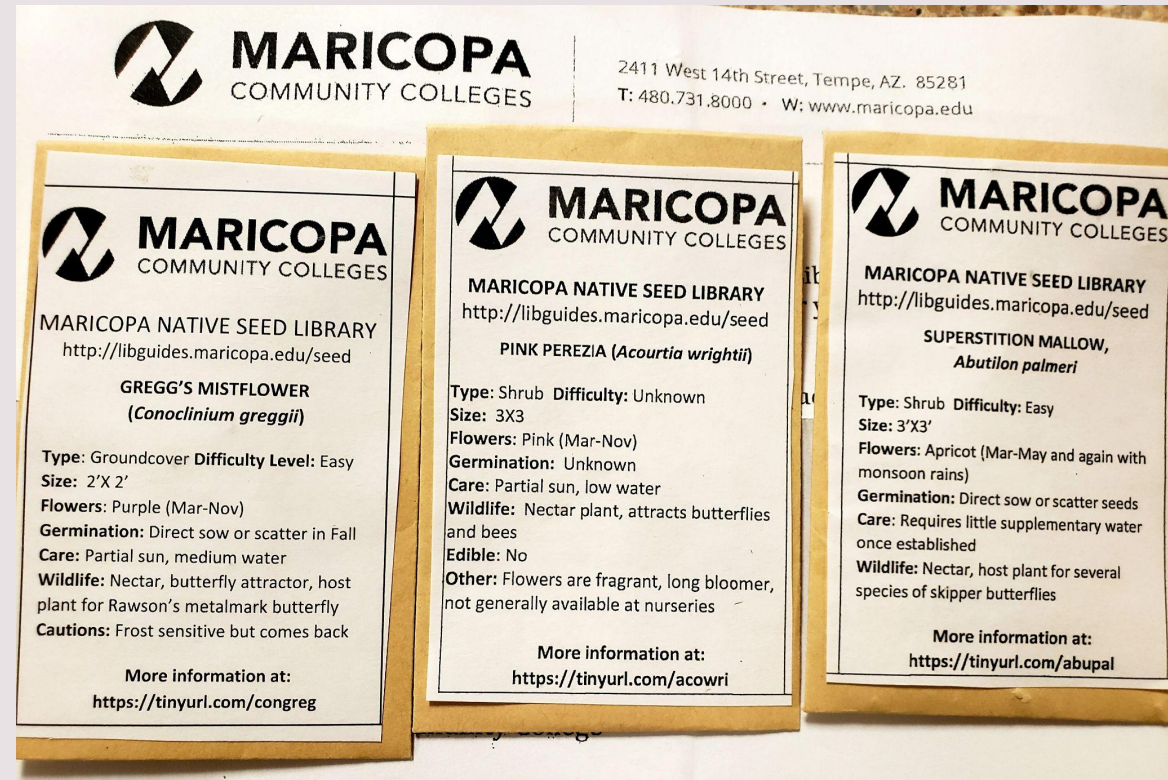
NOTE: Not including the 9 packets of seeds that were a mixture of various native species

Distribution of Native Plant Species





# Special thanks to DBG Great Milkweed Grow Out Initiative, Maricopa Native Seed Library, Linden Tree Nursery, and Rio Reimagined!





A vibrant desert landscape under a clear blue sky. In the foreground, a dense field of purple wildflowers, likely lupines, is interspersed with green and yellow vegetation. The middle ground features a hillside covered in various desert shrubs and bushes. Atop the hill, a large saguaro cactus with two arms stands prominently. The background shows a rocky, arid ridge with sparse vegetation.

What is a native plant?



# Why Should We Use Native Plants?





# Pollinators and Seed-dispersers' Numbers are Declining



- + Western Monarch population is down by 99.9% since the 1980s
- + Three billion fewer birds in North America compared to the 1970s
- + 389 species of birds are in danger of extinction
- + 1200 food crops and 85% of flowering plants worldwide rely on pollinators



# How Do I Know Which Native Plants to Use?

- + Audubon Native Plant Database
  - + <http://audubon.org/native-plants>
- + Maricopa Native Seed Library Plant Database
  - + <https://libguides.maricopa.edu/c.php?g=1050130&p=7622615>
- + Arizona Native Plant Society Plant List
  - + <https://aznps.com/the-plant-list/>







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## Native Plants Database



Bring more birds to your home with native plants



# Native Plants Database

Search

85392

Search

📍 We've found native plants for your zip code. The nearest Audubon offering native plant services is **Sonoran Audubon Society** in Glendale, AZ. **They can help.**

Best Results 58

Full Results 354

Local Resources

Next Steps

In the United States, a native plant is defined as one that was naturally found in a particular area before European colonization. Native plants are the foundation of a region's biodiversity, providing essential food sources and shelter for birds, especially those threatened by the changing climate. Since native plants are adapted to local precipitation and soil conditions, they generally require less upkeep, therefore helping the environment and saving you time, water, and money. The key to getting started is picking the right plants for your area.

The **Best Results** for your area have been hand-selected by Audubon experts in your region. They are important bird resources that are relatively easy to grow and are available at native plant nurseries. Filter your results by types of plants, resources, and the bird families you'd like to attract, or search for specific plant names. Add plants to your list by selecting the checkbox below each plant profile. Then click the orange "Get your plant list" button below to receive an emailed list.



# Alkali-Sacaton

Sporobolus airoides



This is a medium-sized, summer-growing bunchgrass known for its tolerance of alkaline soils. It grows green, deciduous leaves near the base, reddish spikelet seedheads, and small, yellow flowers that bloom mid-summer. This bunchgrass can also tolerate drought, growing up to 3 feet tall in partial shade and moist to dry soil.

Attributes   Grasses, Fruit, Nuts, Seeds

☐ Add to your plant list

Buy Now

May attract



Woodpeckers



Nuthatches



Sparrows



Crows & Jays



Finches



Chickadees & Titmice



# Apricot Globe-Mallow

Sphaeralcea ambigua



Other common names for this perennial herb include Desert Mallow or Desert Globe-Mallow. This woolly and shrub-like plant grows to 1 to 3 feet in height and width, and produces orange to salmon-colored flowers mostly in the spring. This species is among the most drought-tolerant of the globe-mallows, preferring full sun and very little water, with well-drained, rocky or sandy soils.

Attributes   Shrubs, Annuals/Per.

☐ Add to your plant list

Buy Now

May attract



Waxwings



Orioles



Sparrows



Wood Warblers



Vireos



Mockingbirds & Thrashers



# Plant Lists

This guide organizes, categorizes and provides information about plants from the Maricopa Native Seed Library.

**Home**

[Maricopa Native Seed Library:](#)  
[Select Plants](#)

**Plant Profiles: Annuals**

**Plant Profiles: Grasses**

**Plant Profiles: Perennials**

**Plant Profiles: Shrubs**

**Plant Profiles: Subshrubs**

**Plant Profiles: Trees**

**Plant Profiles: Vines and  
Groundcovers**

**Nectar Plants**

**Butterfly Host Plants**

**Best Plants for Containers**

**Full Sun Plants**

**Easy to Grow**

**Blooms by Season**

**Hummingbird Attracting Plants**

**Challenges**

## Maricopa Native Seed Library: Select Plants



This guide is designed to organize, categorize and provide information about plants from the [Maricopa Native Seed Library](#). If you have any questions please contact us at [seedlibrary@scottsdalecc.edu](mailto:seedlibrary@scottsdalecc.edu)



# Cowpen daisy (Verbescina encelioides)

**Other common names:** Butter daisy, Golden Crownbeard, American Dogweed (Spanish: hierba de la bruja, girasolillo)

**Difficulty level** (when grown from seed): Easy



Cowpen daisy, by Danielle Carlock. CC BY-NC

Easy to grow, showy, drought tolerant plant that supports a lot of wildlife

TYPE	SIZE	FLOWER S	GERMINATION	CARE	WILDLIFE BENEFIT S	EDIBLE	OTHER	CAUTION S
Annual	3'X3'	Yellow (Apr-Oct)	Direct sow or scatter	Full sun, low water once established	Special value to native bees and honeybees, nectar, host plant to the Gold Moth and the <a href="#">Bordered Patch</a> butterfly, seeds eaten by birds	No	Long bloom season  Not generally available at nurseries  Can live longer than one season	None

**Recommended use in the landscape:** Cowpen daisy can be planted with other wildflowers for a colorful bloom, or massed for effect. With the long bloom period it would also be well enjoyed by patios. You may also get two crops per year (March-July and July-December).

**For further information:**

Native North American Plant database, Lady Bird Johnson Wildflower Center, 2020. [Verbescina encelioides](#) profile.

SEINet. 2020. [Verbescina encelioides](#) profile.

Southwest Desert Flora, 2020. [Verbescina encelioides](#) profile.

Texas Butterfly Ranch. [Cowpen daisy](#). San Antonio's Unofficial Pollinator Plant of the Year. Retrieved from

# Brittlebush (Encelia farinosa var phenicodonta)

**Other common names:** Goldhills, White Brittlebush (Spanish: Rama Blanca, Incienso, Hierba del Bazo, Hierba [rama] del Bazo, Hierba de Las Animas, Palo Blanco, Hierba Ceniza)

**Difficulty level** (when grown from seed): Easy



Brittlebush, by Danielle Carlock. CC BY-NC

Common, extremely drought tolerant shrub

TYPE	SIZE	FLOWER S	GERMINATION	CARE	WILDLIFE BENEFIT S	OTHER	CAUTION S
Shrub	3'X4'	Yellow (Mar-May; other times after rain)	Direct sow or scatter in Spring	Full sun; very low water once established	Nectar, attracts butterflies and bees; birds eat seeds	Prolific reseeder, so once you have one you will likely get many others.  Seed was collected from the variety with brown flower centers, but some of the offspring may have yellow centers (the more common form of brittlebush)  Dormant in summer	Don't provide too much water or can be invaded by aphids

**Recommended use in the landscape:** Place in a hot sunny part of the yard; can be used as a background plant; pairs well with red flowered plants such as Chuparosa (*Justicia californica*) or succulents and cacti.

**For further information**

Irish, Mary. 2006. Perennials for the Southwest. Portland, OR: Timber Press.

Native North American Plant database, Lady Bird Johnson Wildflower Center, 2020. [Encelia farinosa](#) profile.

SEINet. 2020. [Encelia farinosa](#) profile.

Southwest Desert Flora, 2020. [Encelia farinosa](#) profile.



# What Pollinates What?

## Pollinator Syndromes








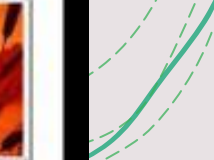
Trait	Type of Pollinator							
	Bat	Bee	Beetle	Bird	Butterfly	Fly	Moth	Wind
<b>Color</b>	White, green or purple	Bright white, yellow, blue, or UV	White or green	Scarlet, orange, red or white	Bright red and purple	Pale, or dark brown, purple	Pale red, purple, pink or white	Pale green, brown, or colorless
<b>Nectar guides</b>	None	Present	None	None	Present	None	None	None
<b>Odor</b>	Strong and musty; emitted at night	Fresh, mild, pleasant	None to strongly fruity or foul	None	Faint but fresh	Putrid	Strong sweet; emitted at night	None
<b>Nectar</b>	Abundant; somewhat hidden	Usually present	Sometimes present	Ample; deeply hidden	Ample; deeply hidden	Usually absent	Ample; deeply hidden	None
<b>Pollen</b>	Ample	Limited; often sticky, scented	Ample	Limited	Limited	Limited	Limited	Abundant; small, smooth
<b>Flower Shape</b>	Bowl shaped; closed during day	Shallow; with landing platform; tubular	Large and bowl-shaped	Large, funnel-like; strong perch support	Narrow tube with spur; wide landing pad	Shallow; funnel-like or complex with trap	Regular; tubular without a lip	Regular and small
								

Photo credits © Merlin Tuttle, Tom Eisner, Edward Ross, Arla Altman, Chris Carvalho, Paul Growald

[WWW.POLLINATOR.ORG](http://WWW.POLLINATOR.ORG)



# BATS



*More than 300 species of fruit are bat pollinated, including bananas, mangos and guava. Bat-pollinated flowers open only at night, are white or light green, emit a strong scent, and produce both pollen and nectar*





# BEEES



Bees are the most common pollinators. They are likely responsible for the diversity of flowering plants found today, while bees in turn would not have evolved without flowering plants. They completely rely on flowers for food during all life stages. Flowers attractive to bees are usually white, blue, or yellow, sometimes with ultraviolet patterns humans cannot see. Females have structures for carrying pollen, and often have an electrostatic charge that attracts pollen to their bodies. There are more than 20,000 species of bee worldwide- more than the number of bird and mammal species combined!

M. Rei Scampavia 2015

# WASPS



P. Zborowski, CSIRO



(c)Kathy Keatley Garvey

Wasps are related to bees, but the larvae are typically carnivorous and fed insects by their mothers. Adult wasps often still visit flowers for nectar.





# BEETLES



*Beetles were probably some of the first animal pollinators. They feed on pollen and flower parts. Flowers that rely on beetle pollination are white to green, produce lots of pollen, and have large bowl-like petals.*





# BIRDS

White-winged dove



Hummingbird



*Hummingbirds rely on flower nectar. Other birds consume nectar and fruit. Flowers attractive to birds are red, orange, or white. Hummingbird pollinated flowers have long tubes to match their long tongue and beak.*







# BUTTERFLIES



Skipper

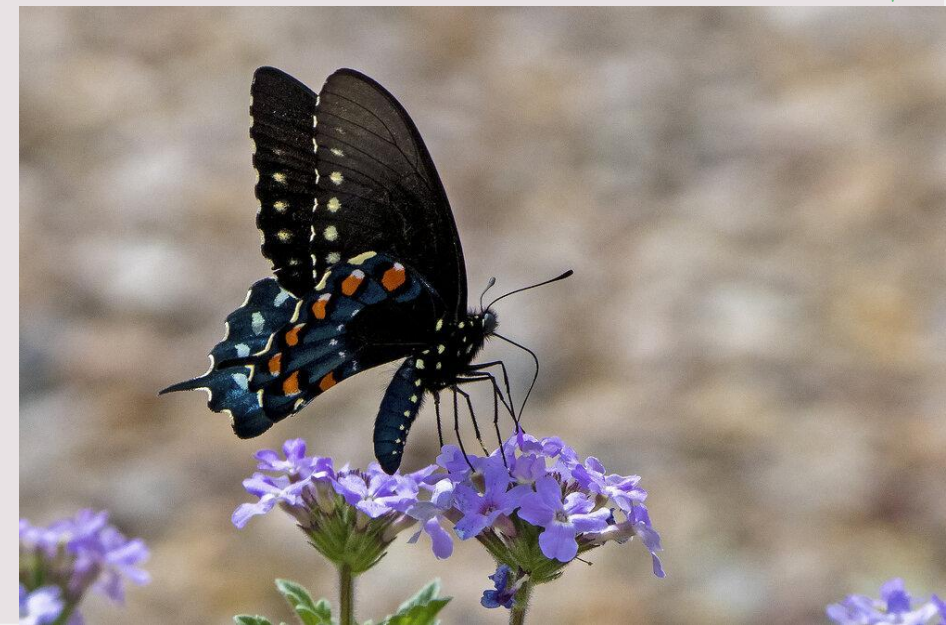


Cabbage White Butterfly



Swallowtail butterfly

*Larvae eat plant vegetation. Adults have strawlike mouthparts to drink nectar. Flowers attractive to butterflies are bright red or purple, make lots of nectar, and have long tubular petals with large landing areas.*





# FLIES



*Adult flies typically visit flowers to drink nectar. Many types of flowers attract flies, but those that specialize in fly pollination are often brown to dark purple, rotten-smelling, and shaped like a shallow funnel or trap.*





# Benefits of Native Plants to People



Photo Credit: Bob McCormick



# Where Do I Get Native Plants?

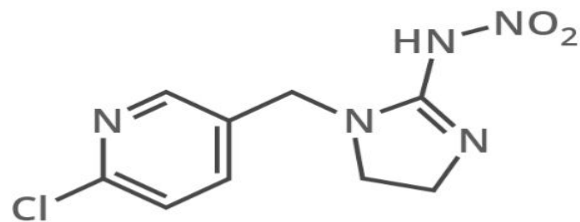
- + Maricopa Native Seed Library
- + SummerWinds Nurseries
- + The Desert Botanical Garden
- + The Arizona Native Plant Society



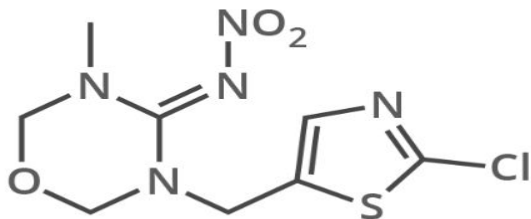


# NEONICOTINOID PESTICIDES - THE FACTS

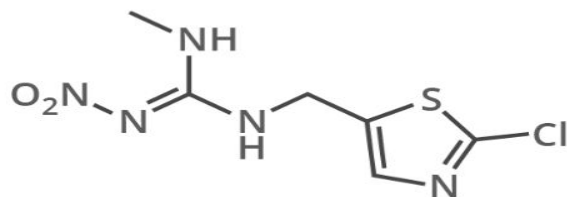
The use of neonicotinoid pesticides has been a contentious issue in recent years. They account for around 25% of the global agrochemical market, but have also been linked with negative environmental effects. This graphic looks at how they work, and the nature of the concerns surrounding them.



IMIDACLOPRID



THIAMETHOXAM



CLOTHIANIDIN



1980s

Decade in which neonicotinoid pesticides first developed

120

Number of countries in which neonicotinoids are registered



Now used more than any other class of insecticide.

## HOW DO NEONICOTINOIDS WORK?



Can be added to irrigation water, then taken up & spread through plant tissues. Also used in seed treatments.



ACh

Bind to nicotinic receptors for the neurotransmitter acetylcholine in the insect central nervous system.



This leads to overstimulation and blocking of the receptors, leading to paralysis and eventual death.

Neonicotinoids pesticides are effective against a wide range of crop pests. They are the most widely used insecticides in the world, accounting for roughly 25% of all insecticide use. Median lethal doses vary depending on the size of the insect, ranging from less than 1 nanogram to almost 90 nanograms per insect. Mammals also have the receptors neonicotinoids bind to, but they bind to them less strongly than in insects, so neonicotinoid mammalian toxicity is much lower.

## ENVIRONMENTAL CONCERNS



- Can accumulate in soil; low concentrations found in nectar of treated crops.
- Linked as contributors to honey bee colony decline. However, this is still inconclusive, and subject to continued research and conflicting interpretations.
- Increasing evidence of effects on non-target organisms. Negative impacts on monarch butterfly populations in the USA have recently been suggested.
- Use has been partially restricted in the EU since 2013. However, some have suggested this has merely led to increased use of older, harsher pesticides.





# What is IPM?

**Integrated Pest Management** is a science-based approach that combines a variety of techniques. By studying their life cycles and how pests interact with the environment, IPM professionals can manage pests with the most current methods to improve management, lower costs, and reduce risks to people and the environment.

## IPM tools include:

- Alter surroundings
- Add beneficial insects/organisms
- Grow plants that resist pests
- Disrupt development of pest
- Prevention of pest problem developing
- Disrupt insect behaviors
- Use pesticides

## 1 IDENTIFY/MONITOR

Determine the causal agent and its abundance (contact your local extension agent for help).

## 2 EVALUATE

The results from monitoring will help to answer the questions: Is the pest causing damage? Do we need to act? As pest numbers increase toward the economic threshold further treatments may be necessary.

## 3 PREVENT

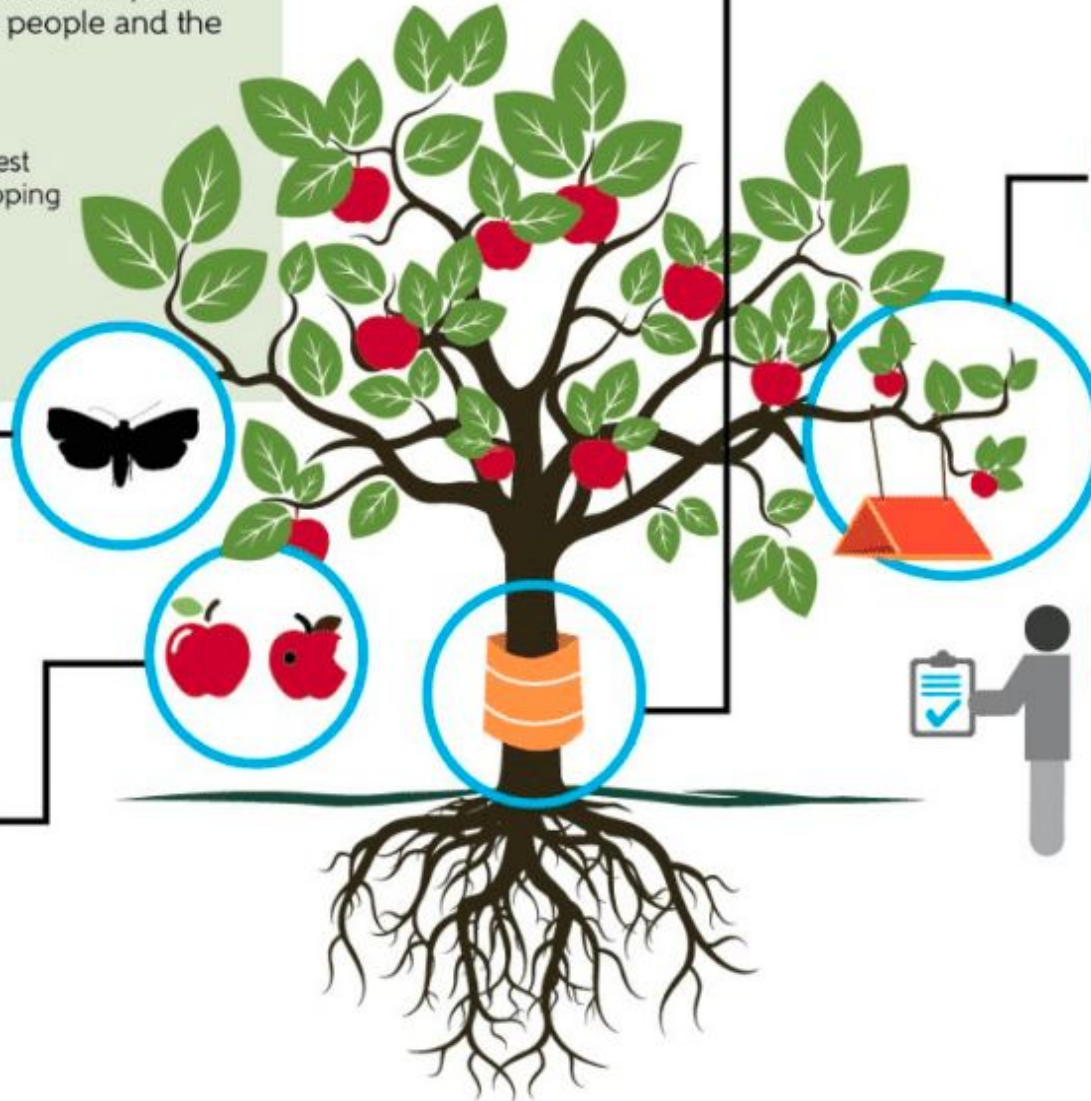
Some pest problems can be prevented by using resistant plants, planting early, rotating crops, using barriers against climbing pests, sanitation, and sealing cracks in buildings.

## 4 ACTION

IPM uses multiple tools to reduce pests below an economically damaging level. A careful selection of preventive and curative treatments will reduce reliance on any one tactic and increase likelihood of success.

## 5 MONITOR

Continue to monitor the pest population. If it remains low or decreases, further treatments may not be necessary, but if it increases and exceeds the action threshold, another IPM tool should be used.





# Native Plants Often At Nurseries

## Shrubs

- Chuparosa (*Californica justicia*)
- Pink Fairy Duster (*Calliandra eriophylla*)
- Brittlebush (*Encelia farinosa*)
- Globe Mallow (*Sphaeralcea ambigua*)
- Angelita Daisy (*Tetrandeureis acaulis*)
- Prickly Pear species (*Optunia engelmannii*, *Optunia santa-rita*)
- Wolfberry species (*Lycium andersonii*)

## Trees

- Palo Verde species (*Cercidium floridum*)
- Mesquite species (*Prosopis velutina*, *Prosopis glandulosa*)
- Ironwood (*Olneya tesota*)
- Desert Willow (*Chilopsis linearis*)

## Herbs

- Penstemon species (*Penstemon eatonii*, *Penstemon parryi*)
- Milkweed species (*Asclepias angustifolia*, *Asclepias subulata*)
- Desert Marigold (*Baileya multiradiata*)
- Chocolate Flower (*Berlandiera lyrata*)





# Chuparosa

Blooms in the winter and spring.

Red Chuparosa tubular flowers

Hummingbird attractant -  
flowers have a cucumber flavor  
– salads?

Semi-succulent leaves





# Brittlebush




Beautiful winter and spring bloomer.  
Bees love the bright yellow flowers!  
Birds love to eat the seeds when they drop  
and are able to eat insects on the flowers.





# Anderson's Wolfberry and Desert Hackberry



tubular lavender  
flowers

Wolfberry blooms for most of the year.

Hackberry blooms in the spring.

Hackberry and wolfberry fruit attracts birds who disperse the seeds which is a form of symbiosis, where both species benefit from an ecological relationship.

Birds are also able to eat insects that are attracted to the plants.





# What if I Live in an Apartment?







# Plant Care: Potting and Soil

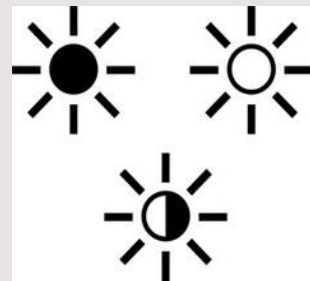
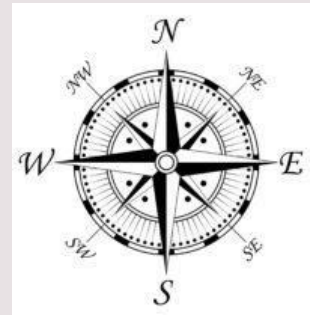
- + Clay vs plastic pots
  - + Clay pots leech moisture from soil
  - + Plastic pots retain moisture in the soil
- + In most cases, use cactus soil mix
  - + Potting soil - 3
  - + Coarse sand - 2
  - + Perlite/pumice - 1







# Plant Care: Sunlight, Water, and Location





# Invasive Plants





A photograph of a small, brown and white speckled bird perched on a green, spiny cactus. To the right of the bird, a bright red beetle with yellow spots is visible on the cactus. The background is a clear blue sky. The text 'Contact Information' is overlaid on the left side of the image.

# Contact Information

Kaylee Delcid

Plants for Birds Coordinator

Sonoran Audubon Society

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Jim Consolloy

Botanical Expertise

Sonoran Audubon Society

[jconsolloy@gmail.com](mailto:jconsolloy@gmail.com)



# Questions?



Visit [sonoranaudubon.org](https://sonoranaudubon.org) to view this powerpoint presentation and learn more